

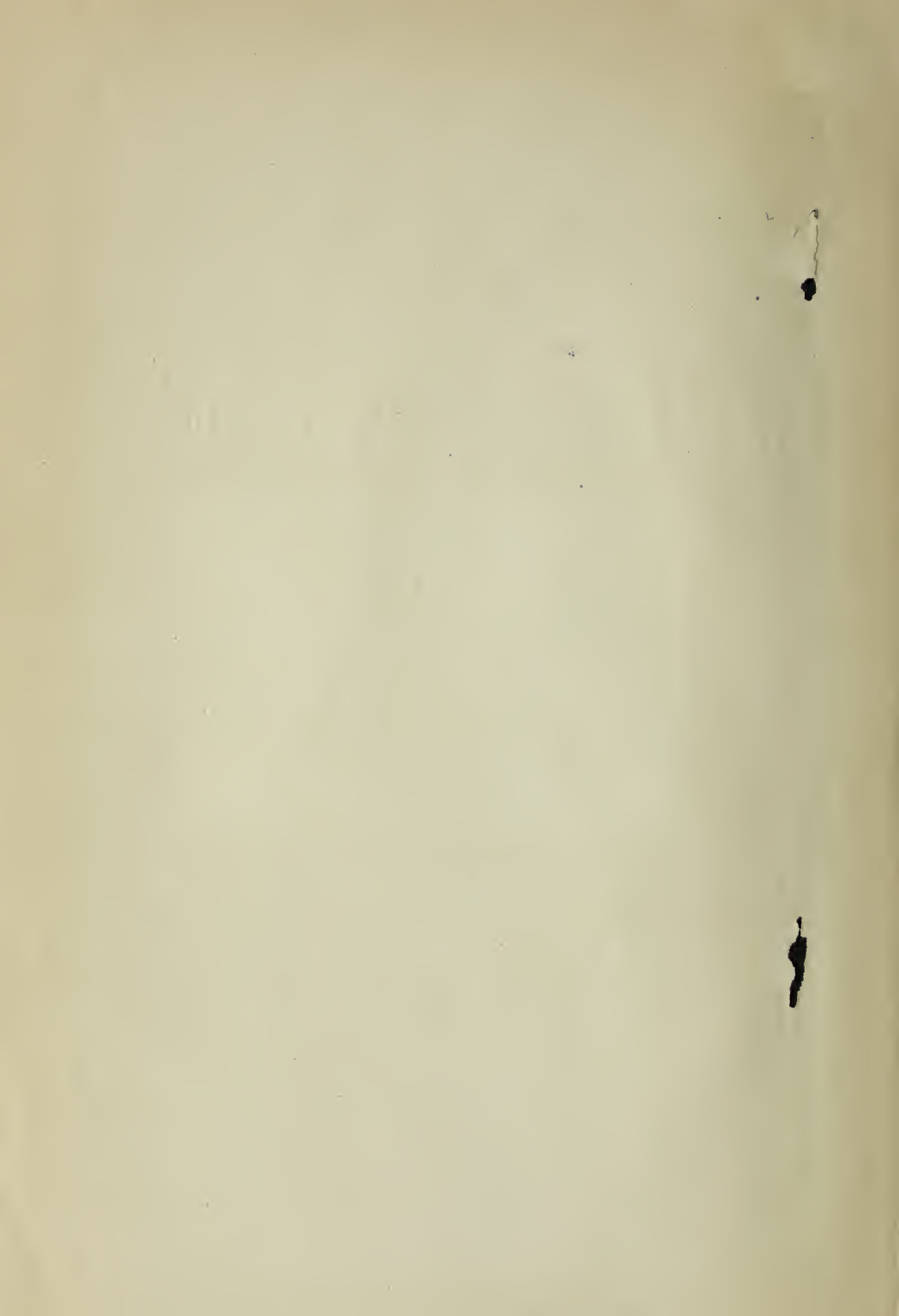
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INOCULATION FOR SWINE PLAGUE.

Frank S. Billings Discusses the Recent
Government Report.

A MASS OF INACCURACIES AND INCONSISTENCIES.

Salmon Denounced and His Numerous Misrepresentations Crit-
icised and Exposed--Some Pointed Questions--The
National Government Held to be Not
Without Guilt.



INOCULATION FOR SWINE PLAGUE.

“U. S. DEPARTMENT OF AGRICULTURE,
BUREAU OF ANIMAL INDUSTRY.

SPECIAL BULLETIN.

REPORT

ON

Inoculation as Preventive of Swine Disease.

BY

DR. D. E. SALMON.

(Advance Sheets from Annual Report, 1889.)

ANNOUNCEMENT.

On account of the importance of the subject, and the desire expressed by many for immediate information, it has been thought best to distribute the following pages as advance sheets from the forthcoming annual report of the Department of Agriculture.

J. M. Rusk, Secretary.”

From the above title page and the “announcement” of the secretary of agriculture it is to be at once seen that the publication upon inoculation which is being spread broadcast over the country has been written by the chief of the bureau of animal industry and endorsed by Mr. Rusk. There is no opportunity in the case for Dr. Salmon to crawl out, as he has done before, and place the blame for any mistakes, which may be shown in the document, upon his unfortunate assistant, Dr. Smith. This, then, is a straight government publication. It is the answer of the department of agriculture to many inquiries for “immediate information.” As will be shown, if the government of the United States had to stand or fall upon the truthfulness of its answers, it would be a more complete wreck than it now is a ridiculous and disgraceful farce. This is supposed to be a government of and for and by the people. The vested power is in the people, the delegated authority to act being vested by the consent of the people in their representatives in Washington. If it can be shown that there is

one single malicious lie, one misstatement of facts in the document in question, then the whole fabric must necessarily fall to pieces of its own rottenness. Not only is the author to blame, but as the secretary of agriculture has given the document his sanction he is equally so, as well as the president and congress. The whole complex and combined institution must stand or fall by the verdict according to the evidence. It has been frequently said that the public is not interested in this discussion between Dr. Salmon and myself; that all the public cares to know is whether inoculation is a fraud or not. That may be so in a certain sense, but behind that question is another of infinitely more vital importance to every citizen than that of swine plague and its prevention. It is the question of honest government. It is the question of justice to every interest in this country at the hands of the selected and delegated powers. Party has nothing whatever to do with it. This work begun under a republican administration has been carried on by it to Cleveland's election; it proceeded uninterruptedly through that and has continued to the present moment and is almost sure to continue until a change occurs again. As for the writer he knows no party but humanity; he simply believes in a rigidly honest government equally just in its action toward every interest in the country. He is a partisan for justice and humanity only. It is well that the farmers of the west, who are just beginning to wake up to the injustice to which they have been subjected, should see the disgracefully dishonest and deceptive manner with which they have been treated and how maliciously they have been deceived by that very department to which their special interests have been delegated.

For the convenience of those readers who may have been favored with a copy of the wonderful production of the gov-

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ernment Ananias I will begin at the beginning and go through it in regular order. First, it should be said that it is but a condensed rehash of the remarks of the same person at the meeting of the National Swine Growers' association in Chicago November last and the Kansas state board of agriculture, and though equally false to previous utterances is not quite so venomous.

The document opens as follows:

"Inoculation with hog cholera virus was first tested as a preventive for this disease in the experiments of the bureau of animal industry in the year 1886."

Mark the words "first tested in the year 1886." Let us see if that statement is true or false. To do so we will turn to the report of the department of agriculture of 1883, page 57, where the same authority said:

"Our investigations have shown that the plague is a non-recurrent fever, and that the germs might be cultivated; they have even proved that these germs may be made to lose their virulent qualities and produce a mild affection. Surely we have here sufficient evidence to show that a reliable vaccine might be easily prepared, if we carried our investigations but a little way further. If we had such a vaccine, if it were furnished in sufficient quantities and of a reliable strength, if it proved safe in the hands of the farmer, would not our problem be solved? Can we reasonably expect anything more or better for this disease?"

M. Pasteur has recently confirmed our American investigations in a very complete manner. He shows that the disease is produced by a micrococcus, that it is non-recurrent; that the virus may be attenuated and protect from subsequent attacks, and he promises a vaccine by spring.

This should certainly inspire our people with confidence and it should incite our authorities to give the suffering pork producers the full benefit of these discoveries at the earliest possible moment. There may be objections to vaccination, and I doubt not these are of certain importance, but with hog cholera already distributed over our whole hog raising territory, these can have but little weight compared with the incalculable benefit that would be conferred by a practicable system of vaccination."

Don't forget that last!

What do the above quotations show? Do they not show that the statement that "inoculation with hog cholera virus was first tested in the year 1886" is false?

If it was not "tested" in 1883, how could Salmon's "investigations have shown that the germs might be cultivated?" How could those "investigations have even proved that the germs may be made to lose their virulent qualities and produce a mild affection?" How could those "investigations have shown" that "we have here sufficient evidence to show that a reliable vaccine might be easily prepared?" How could M. Pasteur have "confirmed our American investigations in a very complete manner?"

Do not these questions show that Dr. Salmon's statement is either unequivocally false, or that he never made the investigations he claimed he did in 1883?

If his investigations in 1883 showed all he then claimed how can he now say: "The method of inoculation was discovered in 1886, but the results were unsatisfactory, as the animals were not sufficiently protected, and the experiments have been repeated under various conditions from that time to the present to learn if any modification of the operation would make it more effectual."

But there is still another side to this question. The statements made in the report of 1883 were absolutely false regarding M. Pasteur's confirmation of Dr. Salmon's work, for the following reasons:

First—Swine plague or hog cholera (Billings was not around, so Salmon knew of but one plague then) was not and is not caused by a micrococcus.

Second—M. Pasteur did not study hog cholera, but rouget, a disease unknown in this country.

Third—Rouget is not caused by a micrococcus, but by a bacillus as shown by Loeffler and Schutz in Germany in 1885.

Fourth—Our real swine-plague-hog-cholera was not discovered to exist in France until 1887.

Fifth—Pasteur's virus contra Rouget does prevent by inoculation.

Salmon's ignoring his work previous to 1885 is on a par with the rest of his endeavors to deceive the American public. It was false, the whole of it. In his instructions to the board of inquiry, Commissioner Colman was very careful not to ask them to report on the work of Dr. Salmon for the years 1880 to 1885, during which time he declared a micrococcus to be the cause of the swine-plague (we had only one disease then, though a second has been created since my success with inoculation), and any one can see how utterly ignorant Salmon now is that he ever worked or made any "in-

vestigations" during that period. The next passage is as follows:

"Prevention by inoculation depends on the well known principle that one attack of a contagious disease generally protects the individual from subsequent attacks of the same contagion. The amount of protection received varies greatly with different diseases and different animals. In no case are all individuals protected in this way from any disease, and in many cases the immunity lasts only for a short period of time."

Compare the above with the assertions in 1883. What an effect my success has had in adding the intellect of the chief of the bureau of animus intensified!

"Inoculation in practice consists in injecting under the skin so much of the strong virus of hog cholera as can be given while producing a fatal attack of the disease. Inoculation is very different from vaccination. The virus used in inoculation is the same in variety and strength as that found in animals dying with the plague, while for vaccination a weakened virus is used, which cannot cause a fatal disease. No method of vaccination has yet been introduced for the hog diseases of this country. Inoculation is now being advocated as a preventive for hog cholera, and it should be remembered that this means the introduction into the animal's body of the strong virus of the malady, and it is only a question of the size of the dose whether the disease produced by this operation is mild or fatal in its character."

The above is the next interesting passage and is false and misleading. Salmon says: "The virus used in inoculation is the same in variety and strength as that found in animals dying with the swine plague, while for vaccination a weakened virus is used, which cannot cause a fatal disease."

In 1883 Salmon said: "Our investigations have shown that these germs may be made to lose the virulent activities and produce a mild affection," and on the next page of this document he has just sent out he says: "In our experience we found that a dose of one cubic centimeter of the strongest virus would occasionally kill an animal," and in 1888 (*Journal Comp. Med.*, April, page 148) he said, "we soon found that there was no indication for attenuating the virus, because the strongest virus might be introduced hypodermically (under the skin) with impunity in considerable doses. Now, as the stronger a virus is the higher the degree of immunity it produces, you can

see that there is every reason for using first unattenuated cultures."

The reader can easily see that here are three contradictory statements.

Salmon is trying to frighten the farmers by inferring that no method of attenuating the virus of swine plague is known, such "as can be given without producing a fatal attack of the disease." But he said in 1883 that he knew how to make it "lose its virulent attributes," while in 1888 he said that the strongest virus could be used with impunity "and that there was no necessity of attenuating it." This is again contradicted in this very document when Salmon says: "The strength of the virus varies so much in different outbreaks of the same disease that a perfectly harmless dose obtained from one outbreak would certainly be fatal when obtained from another."

How can this be when the "strongest virus can be used with impunity?"

What are we to make out of such a mass of inconsistencies?

The truth is that Salmon is absolutely wrong. He does not know either how to select a virus which will prevent, or one which will kill, while I can do both at will and pleasure, as my Nebraska work shows. Whichever way Salmon is followed he will be a blind leader leading his followers into the ditch.

Dr. Salmon's intellect is so intensely and maliciously blinded by his personal hatred of the writer that he seems to have lost all regard for truth and consistency. Personally, I am absolutely indifferent to him, but as the trusted chief of the bureau of animal industry the matter assumes quite a different character. The effect of his misstatements, if not earnestly combated, would be to kill off or smother all attempts at original investigation of animal diseases in the country, which is in accordance with his whole deportment in this matter.

Let us continue this subject of safety as to the dose. First, let me say that I am using two versions of the document as I find it in the *American Veterinary Review* for May, 1890, and the original sent from the agricultural department, and there may be a little discrepancy between the two in places. The reason I say this is that I have been using both documents to cut quotations from.

Salmon says: "Thus, in some experiments that have been made in the west, I am informed that a dose of one cubic centimeter was given and many herds

contracted the disease and died, as should have been anticipated from the experiments made by the bureau of animal industry."

Whew!

The malignancy of such an assertion can be best shown by referring to what has been previously quoted.

On the opposite page from which the above lines were taken Salmon says: "In our experiments we found that a dose of one cubic centimeter of the strongest virus would occasionally kill an animal," and, as has been shown, he said that the "strongest virus could be given with impunity" and that "attenuation was unnecessary." How, then, in the name of common sense could the same dose of a weak and controlled virus, the very strength of which was absolutely known, have caused "many herds" to contract the disease?

Now let us get down to those "many herds" which I killed off. From the government document I clip the following:

The director of these experiments afterwards reported in the NEBRASKA STATE JOURNAL of December 16, 1888, that one party who had 260 hogs inoculated had lost 220. Another farmer who had forty-six inoculated lost "nearly all." Still another who had 121 inoculated lost "a large number," while a fourth, who had ninety-three inoculated, lost all but eighteen or twenty." It is evident from these statements that out of the 1,000 hogs inoculated, the loss was very little, if any, less than 400 head. The disease in these cases appeared in the inoculated herds from ten to fifteen days after the inoculation and was evidently introduced in most, if not in all, cases by this operation.

These experiments show that inoculation is attended with very considerable danger to the health and lives of the animals operated upon. It is no doubt possible to so reduce the dose of the virus as to prevent this heavy mortality following the inoculation, but in that case the protection would be correspondingly less. Leaving out of consideration the question of whether the hog, in case he survives the inoculation, is protected from the disease, it is plain that an operation which is followed by four hundred deaths out of a thousand inoculations has not been sufficiently perfected to merit the confidence of the farmers."

If Dr. Salmon can afford to lie and misrepresent, I certainly cannot. If Mr. Rusk can afford to endorse a lie the pres-

ident of the board of regents of the state university of Nebraska is certainly not in such an enviable position. On this very point Mr. Gere wrote the following to the *Farmer's Review* of Chicago, December 18, 1889:

"For the last year of the doctor's experiments I know positively that no hog inoculated by himself has died from the effect of the inoculation unless he purposely gave a fatal dose.

Now as to the alleged dying of 'whole herds' in southern Nebraska last fall from inoculation. This is a matter that I have carefully investigated. He was called to New York for a month to procure certain apparatus that had been ordered by the board, and in his absence he authorized an assistant familiar with his methods to use material for inoculation already prepared by him, upon sundry herds in Butler county, where he had already inoculated with complete success. He, however, directed the assistant to beware inoculating herds that were already infected with the plague, or that he had reason to believe had been exposed to infection. The assistant went out there and inoculated several herds for well known farmers that had sent in a request for inoculation, in which not a single animal was made perceptibly sick by the inoculation. Then a farmer living in the neighborhood applied to have his herd inoculated. The assistant, on examining the history of the farm and of the herd, was of the opinion that the herd was infected and declined to do so. The farmer insisted, said that he fully understood that if the hogs were infected the inoculation would be of no avail, but said he would take his chances, and he wanted to save his herd if possible. The assistant yielded and made the inoculation. That herd commenced to die a few days after, and, if I remember rightly, over 60 per cent died. Then the same assistant, yielding to the entreaties of a member of the state veterinary and live stock commission, went down to Richardson county and inoculated a herd belonging to the brother of that member, where the hogs were already dying daily from the cholera. Of course they kept on dying. These, with a small herd in Butler county that the assistant had been assured were uninfected, and which doubtless the owner thought were sound, are the only animals among the thousands that have been inoculated in Nebraska for farmers at their request that have died. In all other cases the

hogs were not taken off their feed. And in all these cases the inoculated swine have been usually exposed to the cholera after the required thirty days have passed, and have been immune, the losses having been probably less than 1 per cent. Where a certain number of marked animals have been left without inoculation in these herds, they have inevitably died on exposure to virulent outbreak.

Now this story has to do only with swine that have been inoculated for farmers on their own places, and where the animals have not been under the eye of the doctor. The experiments previously pursued on the farm of the university experiment station, conducted with every precaution against mistakes and misadventures, had absolutely proven that inoculation gives immunity from further danger from the cholera, and that a certain amount of virus administered under the skin of an animal would secure almost absolute immunity, without any injury whatever to the animal. We have to-day as fine a herd of hogs on the farm as you can see anywhere, and they were inoculated when very young. It did not make them perceptibly sick nor stunt them, and they have survived repeated exposures to infection.

Dr. Billings voluntarily resigned his position as investigator of animal diseases on account of the opposition raised against him by Dr. Salmon, of the bureau of animal industry at Washington, and his agents in this state. The regents and faculty of the university were convinced of the great value of his work, and believed that it was a great injury to Nebraska that the silly jealousy of the Washington bureau was permitted to prejudice the minds of sundry state officials and the members of the legislature against him to the extent of threatening to starve the university by the withholding of the annual appropriations unless he was dispensed with. These threats coming to his ears, he at once resigned."

Salmon says that I reported what he had written in THE NEBRASKA STATE JOURNAL of December 16, 1888. As he has given a more detailed version of the affair in other places I desire to copy the same from his address before the Kansas state board of agriculture, which is as follows:

"Several other parties also lost large numbers of the inoculated hogs. I am unable to give the exact figures, but Dr. Billings published a letter in THE NEBRASKA STATE JOURNAL of December 16,

1888, in which an attempt is made to explain the enormous losses which followed these inoculations; and in this letter he admits that Mr. Hess lost 220, Mr. L. E. Luddon, who had forty-six inoculated, lost 'nearly all,' and Mr. Steele, who had 121 inoculated, lost 'a large number,' while Mr. Sylvester, who had ninety-three inoculated, lost 'all but eighteen or twenty.' It is very evident from these admissions that out of the 1,000 hogs inoculated the loss was very little if any less than 400 head. How it is possible, after admitting these facts, for Dr. Billings to publicly assert that there was 'a reported loss of but eleven hogs out of the whole number,' I am unable to explain; but I am very certain that the reader of this pamphlet does not obtain a correct idea of the result of the Nebraska inoculation.

This result of the Nebraska inoculations cannot be explained away, and it shows that the danger from inoculation, which has been demonstrated by the experiments of the bureau of animal industry, and which was afterwards pointed out by Dr. Billings himself, was a danger which had not been in the least overrated. In spite of these facts, and basing his claims for recognition upon these Nebraska inoculations, Dr. Billings now comes before the farmers of the United States and asks to be allowed to inoculate their hogs for 50 cents a head. Leaving out of consideration the question of whether the hog, in case he survives the operation, is protected from the disease, I ask you to decide in your own minds if an operation which is followed by 400 deaths out of 1,000 inoculated has been sufficiently perfected to merit your confidence."

Now, if I can show that not only those statements are largely false, but that the quotation from THE STATE JOURNAL is also falsely incomplete, the value of the government's testimony is proven to be rotten.

First—The statement as to eleven hogs having been reported as dying out of 1,000 had no reference to those at Surprise, Neb., whatever, as I did not include them or have them in mind when I made it. There were other lots of hogs inoculated in Nebraska of which Mr. Salmon has no knowledge whatever, as I left the state before I had time to report on them. When I wrote the document from which Mr. Salmon quoted I told the exact truth. The figures have somewhat changed now. The loss, so far as I have been able to find out, in those hogs

referred to eventually proved to be thirty, for which there were good and sufficient reasons. The virus had got old and valueless for prevention, though it had retained its virulence. I lost fifteen of thirty sent to Peoria out of the bunch sent from Gibbon, Neb., while of eighteen sent from Mr. Walker's and inoculated by himself I did not lose one. The virus used on the Gibbon hogs was the forty-fifth generation of the same used in Mr. Walker's. These eighteen hogs of Mr. Walker's have been kept in outbreaks of hog cholera ever since November last and as far as I know to-day are still all living.

Now as to that Surprise business. In THE STATE JOURNAL I wrote as follows:

D. L. Sylvester had.....	93 head inoculated.
Ed Hickey had.....	163 head inoculated.
F. W. Luddon had.....	52 head inoculated.
L. E. Luddon had.....	46 head inoculated.
H. H. Hess had.....	260 head inoculated.

Total.....614.

I did not do this work nor visit the place. In fact the whole rumpus occurred while I was away in New York. On my return I found out the "devil was to pay" and my friends much distracted and immediately set to work to get at the facts and wrote Mr. Walker of Surprise, who was the chief sinner, in that his neighbors followed his example. I will say that the person sent to do the work exceeded his instructions, though I will not blame him. Every one of the herds in which death occurred was either sick or infected at the time. In my article I said: Mr. Walker writes that "Sylvester's hogs were dying at the time," so that strikes out ninety-three at once, and brands Salmon as a falsifier of facts and that he failed to quote me honestly. Mr. F. Wilbur Luddon had not then lost a hog, as I also stated; that knocks out another forty-six. "What occurred to Mr. Hinkley's I do not know" is what I said, so that knocks out 163 more. The whole story was, however, told later by Mr. Walker in a Columbus, Neb., paper, as follows:

"Others subsequently desired to have their hogs inoculated and upon request Dr. Billings sent out Dr. Thomas about the 26th or 27th of September to do it. I had inoculated my pigs a few days before his arrival. D. L. Sylvester had ninety-three inoculated, Ed Hinkley 160, Mr. Hess 260, Wilbur Luddon fifty-two, and Lew Luddon forty. Perhaps the odd numbers are not always correct. Mr. Sylvester's were sick and some had

died before they were inoculated. He had them inoculated as an experiment at his own request. I have recently learned that Mr. Hess' hogs had been the subject of considerable discussion before they were inoculated. He was feeding several car loads of cattle and it required a big bunch of hogs to follow them; some had been picked up over the country. I have spoken with several gentlemen and men of large experience with hogs who had seen them before they were inoculated and gave as their opinion that they were infected before they were inoculated; some had gone so far with their opinion as to say so to Mr. Hess, but it should also be remarked that he did not entertain the same opinion. So far as I know the health of the other three herds had never been questioned before inoculation. Mr. Sylvester lost all but seventeen, Mr. Hess all but forty, Mr. Lew Luddon all but six; Mr. Hinkley's loss I cannot give, but it was not so great. Mr. Wilbur Luddon did not lose a pig. If these losses were the result of inoculation it certainly is not a success. Inasmuch as Mr. Sylvester's were sick and dying at the time they were inoculated it is not a fair presumption that inoculation killed them. The public have the facts as to the Hesses and must judge for themselves. Mr. Lew Luddon did not inoculate ten head; these suffered with the forty that were inoculated. More than this, another brother occupying the same premises with him had a small bunch of some half a dozen in a small inclosure off from the others which took the cholera also. If they were afflicted by inoculation it must have been from sympathy. These facts show the place was infected—that hogs that had never been exposed to the inoculated hogs took the disease and must have taken it from the infection on the place. Mr. Wilbur Luddon, who occupies the farm across the way, did not lose a pig. If inoculation was the cause of the death of Mr. Lew Luddon's, as has been charged in some of the papers, we have this cause for congratulation: that we have discovered a most wonderful chemical principal—a poison whose action depends entirely upon the side of the highway it is administered."

There is still another side to this story, reported in that same paper at the same time, which Dr. Salmon did not quote. The person who inoculated at Surprise went direct to Gibbon, Neb., using the same virus, where he inoculated for:

Head.

W. A. Rogers	10
S. C. Bassett.....	22
H. A. Lee.....	154
Humphrey & Harris.....	34
D. P. Ashburn.....	18
To which were added C. H. Walker, Surprise.....	11
State farm pigs, done by myself with the virus in its first generation, before I went away....	30
Total.....	279

Of the effects at Gibbon, Mr. Ashburn answered: "None of the hogs in this vicinity that were inoculated were or are any worse for it that can be seen." The state farm hogs are still alive.

So much for Dr. Salmon as a reliable quoter of evidence. It will thus be seen that it was actually impossible for the same virus to be used at the same time in one place be murderous and in other places and do no harm whatsoever. It cannot be done. How ridiculous Dr. Salmon's remark appears "that the strongest virus can be used with impunity and needs no attenuation," in comparison with what he tries to make out against me. But that he either does not know what he is talking about or cannot tell the truth and to warn people against falling into the danger of using the "strongest virus with impunity," I will say that I tested some of Mr. Ashburn's hogs, mentioned above, with one cubic centimeter of the "strongest virus" I could get late in December, 1888, and at the same time inoculated seventeen healthy ones at the state farm, Nebraska, and killed fifteen by the latter and made all sick, while not one of the inoculated hogs of Mr. Ashburn's was affected. Again, I have inoculated a few thousand hogs since October, 1889, and no one has been troubled seriously with deaths or stunting, as may be seen by a pamphlet which can be easily had.

The next remark of Dr. Salmon's is so amusingly false that I will most cheerfully send it all over the world if he will furnish me a copy of it. He says: "In view of these facts, when anyone comes before the farmers of the country and recommends inoculation it is well to inquire whether he is interested in the operation from a pecuniary point of view?"

That is too good to be lost. I hope my friends in Nebraska will bear that well in mind. I do not need to refute it. No one before ever was rash enough to accuse me of trying to make a dollar. I think some members of my own family would give prayers of gratitude were that only true. Yet I am in this thing for all the "millions there is in it" if they

will only enable me to build, equip and endow a laboratory and hospitals for the investigation of the non-recurrent diseases of child life. Yes, I am after the millions, but only to squander them that human life and the live stock of this country may be sound, if honest and undisturbed investigation can do it.

DR. SALMON AS A FINANCIER.

"This brings us to the final test which must be applied to all methods of prevention, and that is their economic results. We will now consider inoculation from this point of view. Leaving out of consideration for the present the many reasons for believing that inoculation is a dangerous operation, and that it does not do what is claimed for it in the way of prevention, we will compare the cost of preventing hog cholera by this operation with the amount or loss caused by this disease.

According to the estimates of the statistical division there are about 50,300,000 hogs in the United States. The inoculation of these at 50 cents per head would cost \$25,150,000. The total loss from disease during the year 1888 was 3,105,000 hogs at an average value of \$5.79 each. This would make the total loss of swine from all diseases \$17,980,000. In order to estimate the loss from hog cholera we must deduct from this sum the losses from ordinary diseases, such as animal parasites, exposure, overcrowding and improper feeding, which are always acting and do not produce epizootic diseases. These losses were estimated by the statistician of the department in 1886 to be about 4 per cent of the total number of hogs, but as this may be considered rather a large estimate, we will in our calculation take 3 per cent as the average loss from such causes. This would amount in 1888 to 1,509,000 animals, valued at \$8,737,000, and deducting this from the total loss of swine, we have remaining \$9,243,000 as the losses from epizootic swine diseases. In the present condition of our knowledge we must admit that there are at least two entirely distinct epizootic diseases of hogs, which have been referred to in the reports of this bureau as hog cholera and swine plague. The exact proportion of the loss caused by each of these diseases is at present unknown, but if we admit for the purposes of this calculation that but one-third of the loss is caused by swine plague, we have remaining a loss of but \$6,163,000 for the year 1888, which can be attributed to hog

cholera. [With no knowledge of where his swine plague exists; with no description of that disease given by him, how can Salmon say that?—B.] To prevent this disease by inoculation, as we have just seen, requires the expenditure in cash of \$25,150,000, or more than four times the value of the actual losses. In addition to this expenditure there should be counted the time required of the farmer in handling the hogs at the time of the operation and in giving them such precautionary care, and in practicing such disinfection as is required to make this operation at all successful.

We should reach the same conclusion if, instead of estimating the loss and expense for the whole of the United States, we should take a single hog-raising state, as for example the state of Illinois. According to the statistician's estimate, there are 5,275,000 hogs in Illinois, and to protect these by inoculation would cost \$2,637,000. In the year 1888 the total losses of hogs in that state from all diseases was about 316,500, with an average value of \$7.45 each, which would make the loss that year \$2,359,925. Deduct a loss of 3 per cent, this would amount to 158,250 hogs, worth \$1,178,962. Deducting the losses caused by ordinary diseases from the total losses from all diseases and we have \$1,180,963 left to represent the loss from both hog cholera and swine plague. Take from this one-third to represent the loss from swine plague and we have remaining as the loss from hog cholera about the sum of \$800,000. To prevent this loss by inoculation, as we have seen, would require \$2,637,000, or more than three times the sum to be saved."

Moral: Don't insure your house and stable against fire; it costs the state too much to pay for fire insurance.

SOME MORE DISHONEST TESTIMONY.

As is well known the board of inquiry took 17 hogs from Nebraska and reported the results of their tests upon them as follows: "The commission regards their experiments concerning immunity as inconclusive and more or less indefinite; yet it seems to be evident that there is a certain degree of protection against artificial acquisition of hog cholera possessed by the Nebraska pigs which had been inoculated and which had recovered from the natural disease, the latter appearing to be slightly less protected than the former. Furthermore, the feeding experiments above mentioned appear to indicate that the hog can be artificially

protected against the action of virulent living cultures even to a greater degree by introducing the germs into the stomach than by subcutaneous inoculation."

That is all the board said, except to say, also, that "some of the tests made in Nebraska certainly give promise of great possibilities in this direction."

Now comes Dr. Salmon with the following: "The board of inquiry, appointed by the commissioner of agriculture in 1888, procured a number of hogs that had been inoculated in Nebraska, about seventeen [this is not correct, four of them were recovered ones from a natural outbreak and two left over or recovered from my test of inoculation referred to above] and tested them by feeding them cultivated virus of hog cholera and by inoculating them with the virus of hog cholera and swine plague.

In each case a number of animals that had not received the protective inoculation were used in the experiments to determine the effect of the exposure on ordinary swine. The first test was made by feeding cultivated virus, but this did not prove strong enough to kill any of the hogs. Even those which had not been inoculated survived, but all of the hogs, including those which had been inoculated, were very sick. The inoculated hogs were not quite so sick as the others, but there was very little difference."

SOMEBODY LIED!

The above is Salmon's version of the story and it does not hold good with that of the commission. I need not say a word to the hog breeders of the country as to the degree of protection a natural outbreak gives against a second attack. They know as well as I. But Salmon has always said it was a "non-recurrent disease" until this time, when he seems to have forgotten it. Convenient memory that fellow has! Now, if the inoculated hogs were more protected than the recovered ones, as the board said, then I say they stood the test, no matter what version may be put on the matter since then. Again, five of these hogs were from the herd of Mr. D. P. Ashburn of Gibbon, of which I tested the majority, some twenty, at the time. I killed fifteen out of seventeen healthy pigs, and another five, more of the same lot as the eighteen I sent to Peoria from Mr. Walker's farm, which it has been impossible to kill, and they have been tested as severely as

a man can do it and do the matter any justice whatever. These facts cannot be gotten over. If these things occurred as Dr. Salmon says, then the board of inquiry lied and were unmitigated swindlers. They had no right to so deceive the public. If the board told the truth in their report, then Dr. Salmon lies in this; and in either case the government lies somewhere and hence no particle of its evidence is worth the paper it is printed on.

It will be noticed that Salmon says the Nebraska hogs were tested with "the virus of hog cholera and swine plague." No test of these hogs with what Salmon calls swine plague is mentioned in the report of that board and hence we have a right to assume that none was ever made by the board.

The following letter confirms that view. I telegraphed Professor Burrill August 10, 1889, to know what had become of the Nebraska hogs which the commission took east, and received the following reply:

"CHAMPAIGN, ILL., August 10, 1889.—Dear Doctor: Have just answered your telegram to the best of my ability. When I saw the pigs no trial had been made upon the Nebraskans with Salmon's "swine plague," and I am quite sure nothing was said about it to me by Dr. Shakespeare subsequently. Abundant trial had been made both by feeding and by subcutaneous inoculations with the Washington "hog cholera without serious effect. None stood the test so well as those Nebraska pigs." It is, however, quite possible that Dr. Shakespeare has tried "swine plague" (Salmon's) since our correspondence upon the subject. Have not seen anything in print on report. Am not certain what publicity has been given. The two diseases are acknowledged, the one, however, said to be much more prevalent than the other. No attempt is made in the report to compare European work, though we did have some cultures from abroad.

You can understand that it was difficult for separate workers to make a report. Would liked to have published full details, but found only certain conclusions could be agreed upon, not always worded at one would do it for himself. At any rate, nothing was considered except what is the fact.

Very truly yours,

T. J. BURRILL."

If these hogs were tested with Salmon's swine plague by Dr. Shakespeare,

as a member of that board it was his duty to have told the other members. As he did not, and as no such fact is mentioned in the report of the board, we may be thoroughly sure that that statement is absolutely false as far as the testimony of the board is concerned.

What was done with those hogs after the board disbanded August 1, 1889, has nothing whatever to do with the matter, nor is any testimony as to things done with the hogs of any value, simply because so many untruths have been told that we have nothing to rely upon.

Somebody lied, and the live stock owners of this great west do not deserve to be called men if they do not make "Rome howl" until they find out who?

MORE QUEER STATEMENTS.

Salmon goes on telling some more wonderful things which that board of inquiry did, not a word of which is mentioned in their report, and which, if so, condemns them, and if not so falls again upon the government and that poor, misled individual, honest Jere Rusk.

This additional news is as follows: "Four of the inoculated hogs from Nebraska and five hogs from Pennsylvania which had not previously been inoculated were then inoculated with the virus of the disease known as infectious pneumonia or swine plague. Of the four Nebraska inoculated hogs three died and one recovered, but this one, when subsequently killed for examination, proved to be very severely affected. Of the five hogs which had not been previously inoculated one died and four were sick and recovered. When killed for examination one of the four was found seriously diseased, the three others were either slightly or not at all affected.

Still later four Nebraska inoculated hogs and two other hogs which had not been inoculated were fed upon the viscera of hogs which had died of hog cholera. Two of the inoculated hogs and the two hogs that had not been inoculated contracted hog cholera and died. Two of the inoculated hogs remained well.

As a last test, the remaining six animals from Nebraska were inoculated by intravenous injection of hog cholera. Of these, three had been inoculated with hog cholera virus, and had been inoculated with the sterilized liquids in which hog cholera germs had grown, and two had recovered from an attack of hog cholera. The four hogs which had received the protective inoculation all died.

One of the recovered hogs died and the other resisted the virus and remained well." (That's no test!)

"It is quite evident from these experiments that the animals inoculated in Nebraska were fully as susceptible to hog cholera after the operation as were those which had been inoculated in the experiments of this bureau in Washington."

As said, not a word of the above can be found in the report of the board. Who made these experiments? The board did not!

Where did that virus of "swine plague pneumonia" come from?

According to the report of the board, they had not seen a case during their work. According to the agricultural reports published up to the time the board was appointed, there was no evidence in existence that any germ of such a disease, not plague, existed, and no such evidence can be found until the report of 1888, issued in 1889, and hence not until 1889.

Does Professor Burrill's letter give us a key to this mystery. He says: "We did have cultures from abroad."

Is it the germ of the German Schweine such imported for special use (to kill Billings) "from abroad" that has suddenly enabled these people to kill hogs with swine plague, which they were absolutely unable to do until this importation was made?

A rigid examination might reveal a pretty large piece of villany in this business.

As for the injection of cultures into the blood, nobody but a fool would bring up such evidence as that. Fine saw dust would also kill if used in the same way.

If so much of Dr. Salmon's document is false; if the report of the board of inquiry is false also, as I have shown elsewhere; if it was fixed as everyone knows, what value has this whole testimony?

Who wrote the report of that board of inquiry? Did Salmon? I want to show that the two members of the board did put their names to a self-evident falsehood by two simple quotations, which are as follows:

"The undersigned regret that the departure of one of their number for Europe before the draughting of this report has made it impossible for the entire commission to sign it.

Respectfully submitted.

E. O. SHAKESPEARE,
Chairman.

T. J. BURRILL.

Washington, D. C., August 1, 1889."

It is a well known fact that there was a minority report, which from the context shows that Dr. Bolton had no intention of signing the above, as he differed from the report of those two signers most materially. It is also evident that they must have known that Dr. Bolton did so, as well as every one else connected with the work. Here is the evidence:

REPORT OF PROFESSOR B. MEADE BOLTON

Hon. Jeremiah M. Rusk, Secretary of Agriculture:

* * * * *

Very respectfully, B. MEADE BOLTON,
University of South Carolina, Columbia, S. C., May, 1889.

The difference in the dates is all that is necessary to call attention to. Anyone who will carefully read the two reports will see that they disagree on the chief essential.

"CONTAGIOUS DISEASES."

Salmon says: the diseases are contagious, both of them. First, as to hog cholera, Salmon does not know what contagious means, as is shown by the following:

"Another consideration even more important appears to have been overlooked. In inoculating a herd the contagion of the disease is introduced upon the premises, and in spite of any precautions which can be observed the grounds will be infected. This infection remains a considerable time, and the experience of those who have had herds inoculated is said to show that if any uninoculated hogs are added to the herd they are very liable to contract cholera and succumb to the disease."

Contagious diseases do not infect the earth in any such manner. The second remark is false! Not one single person has ever had an accident from inoculated hogs extending the disease, simply because they could not make such an assertion knowingly as no hogs have been inoculated on uninfected ground. That such a thing could occur, if I was careless in inoculating as Dr. Salmon is in his statements, is perfectly true. Salmon simply borrowed that from my own writings, as he has every other objection which has any possible grounds against inoculation. Salmon is working for \$3,000 a year. That's where the real "pecuniary interest" comes in. Such a beggar's salary as that would not pay my annual charities. But that is where the boot pinches nevertheless. Salmon is getting more than he is worth and knows it.

THAT TWO PLAGUE FARCE.

Salmon says: "The existence of two diseases has been very vigorously denied, but the conclusions of the bureau of animal industry on this subject have now been confirmed not only by the board of inquiry appointed to consider this question, but also by Professor Welch, the eminent pathologist of Johns Hopkins university. In the future, therefore, the conclusions as to the economy of preventing swine diseases by inoculation must be based upon the assumption that there are at least two diseases, each of which will require a special inoculation for its prevention."

Let any one look through the report of the board and see if they can find any evidence that they ever saw one single case of that second widespread epidemic disease among hogs in the country called swine plague save where they saw in the reports of the bureau. Every body knows that that board made no study of the diseases of the hogs in this country, so the less Salmon has to say about that monumental farce the better.

Now as to Professor Welch! A quotation from his own bulletin, Johns Hopkins university, December, 1889, will show that Dr. Salmon has made him appear in a false light, and that Professor Welch does not say a word about a second "widespread swine plague in this country." In fact the quotation from Professor Welch will show that he has come to no conclusion whatever.

Hence, the word "contagious" as applied to Salmon's swine plague "is as useless as himself."

Welch says: "It is not clear to us what role is to be assigned to the swine plague bacilli in the natural infections which we have studied. The facts that experimentally the swine plague bacillus is capable of causing extensive pneumonia and inflammations of serous membranes, and that epizootics occur in swine in Germany with these as the predominant lesions without intestinal disease, suggest that this organism, which is apparently identical with that of the German Schweine-Seuche, is also the cause of a similar affection in this country. We are not, however, aware that any swine epizootic of pneumonia without any intestinal lesions and with the sole presence of swine plague bacillus has been observed in this country, although cases of this description occur scattered in epizootics of hog cholera with intestinal lesions. Until such an epizootic is observed in this country

it is not likely that the question will be thoroughly elucidated as to the role of the swine plague bacilli. It is possible that the swine plague bacilli are frequently present in the mouth, the air passages or the intestines of healthy hogs, analogous to the frequent presence of the micrococcus of sputum-septicaemia and of pneumonia in the mouth of human beings, and that in the mixed infections which we have observed the wide spread diffusion of the swine plague bacilli is due to secondary invasion following infection with the hog cholera bacilli. This, however, does not remove the grave significance of the swine plague bacilli, which certainly can not be ignored in our studies in this country of the diseases known as hog cholera or swine plague."

We hope Professor Welch won't choke in trying to swallow that. What does the above prove? Absolutely nothing, save that some kind of a germ, which they do not know where or how to place, does something which they are not at all sure about.

That this second "widespread swine plague of Salmon, Welch, Shakespeare, et al. need not worry anybody, nor interfere with inoculation, is equally well shown by the Bureaucratic Ananias himself, who said in his address before the national swine breeders' association: "Then there is the germ in hog cholera, a disease widely distributed, generally extremely fatal, and probably productive of the greater part of the loss which falls upon the hog raiser."

After such an admission, is it not self-evident that the government is lying when it talks about a "widespread epidemic disease" which it calls "swine plague?"

I think that sufficient evidence has been given to show that not one word of the document in question can be relied upon. It matters nothing to me financially whether inoculation succeeds or not, except in honor to those engaged with me, and that it pays enough to do what I desire for humanity.

I cannot afford to write it up in a false light. Should I do so it would soon be found out and have a more discouraging effect upon the development of original research in this country than the unwarranted and libellous attacks of the government upon it. From beginning to end the agricultural department has been bitterly opposing and intriguing against me. They began the fight and now it will be open war so far as I am concerned until honesty reigns in Wash-

ington and the live stock interests of this country find an honorable and just recognition. Above all and everything else let us have honesty and justice. If we cannot have that republicanism is a failure and democracy a farce. While they have been, they need not be. The farmers are awakening; the wage earner is already awake. Before their advancing phalanxes truth shall rise triumphant and demagogism driven to reek once more in the gutters of its own corrupting filth.

ONE STATEMENT OF SALMON'S WHICH
MUST NOT BE FORGOTTEN.

When this individual thought it necessary to promise something regarding inoculation, and when he had the entire monopoly of investigating animal diseases in this country, he said :

"Surely we have sufficient evidence to show that a reliable vaccine could be easily prepared."

"This should certainly inspire our people with confidence, and

it should incite our authorities to give the suffering pork producers the full benefit of these discoveries at the earliest possible moment. There may be objections to vaccination, and I doubt not that these are of certain importance; but with hog cholera already distributed over our whole hog-raising territory, these can have but little weight compared with the incalculable benefit that would be conferred by a practicable system of inoculation." 1883.

Certainly no further comment is necessary.

Chicago, May 7, 1890.



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